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From Phoenecia to Hayek to the 'Cloud'

Human progress has always depended on spontaneous collaboration to harness dispersed knowledge.

By MATT RIDLEY

The crowd-sourced, wikinomic cloud is the new, new thing that all management consultants are now telling their clients to embrace. Yet the cloud is not a new thing at all. It has been the source of human invention all along. Human technological advancement depends not on individual intelligence but on collective idea sharing, and it has done so for tens of thousands of years. Human progress waxes and wanes according to how much people connect and exchange.

When the Mediterranean was socially networked by the trading ships of Phoenicians, Greeks, Arabs or Venetians, culture and prosperity advanced. When the network collapsed because of pirates at the end of the second millennium B.C., or in the Dark Ages, or in the 16th century under the Barbary and Ottoman corsairs, culture and prosperity stagnated. When Ming China, or Shogun Japan, or Nehru's India, or Albania or North Korea turned inward and cut themselves off from the world, the consequence was relative, even absolute decline.

Knowledge is dispersed and shared. Friedrich Hayek was the first to point out, in his famous 1945 essay "The Use of Knowledge in Society," that central planning cannot work because it is trying to substitute an individual all-knowing intelligence for a distributed and fragmented system of localized but connected knowledge.

So dispersed is knowledge, that, as Leonard Read famously observed in his 1958 essay "I, Pencil," nobody on the planet knows how to make a pencil. The knowledge is dispersed among many thousands of graphite miners, lumberjacks, assembly line workers, ferrule designers, salesmen and so on. This is true of everything that I use in my everyday life, from my laptop to my shirt to my city. Nobody knows how to make it or to run it. Only the cloud knows.

One of the things I have tried to do in my book "The Rational Optimist" is to take this insight as far back into the past as I can—to try to understand when it first began to be true. When did human beings start to use collective rather than individual intelligence?

In doing so, I find that the entire field of anthropology and archaeology needs Hayek badly. Their debates about what made human beings successful, and what caused the explosive take-off of human culture in the past 100,000 years, simply never include the insight of dispersed knowledge. They are still looking for a miracle gene, or change in brain organization, that explains, like a deus ex machina, the human revolution. They are still looking inside human heads rather than between them.

"I think there was a biological change—a genetic mutation of some kind that promoted the fully modern ability to create and innovate," wrote the anthropologist Richard Klein in a 2003 speech to the American Association for the Advancement of Science. "The sudden expansion of the brain 200,000 years

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ago was a dramatic spontaneous mutation in the brain . . . a change in a single gene would have been enough," the neuroscientist Colin Blakemore told the Guardian in 2010.

There was no sudden change in brain size 200,000 years ago. We Africans—all human beings are descended chiefly from people who lived exclusively in Africa until about 65,000 years ago—had slightly smaller brains than Neanderthals, yet once outside Africa we rapidly displaced them (bar acquiring 2.5% of our genes from them along the way).

And the reason we won the war against the Neanderthals, if war it was, is staring us in the face, though it remains almost completely unrecognized among anthropologists: We exchanged. At one site in the Caucasus there are Neanderthal and modern remains within a few miles of each other, both from around 30,000 years ago. The Neanderthal tools are all made from local materials. The moderns' tools are made from chert and jasper, some of which originated many miles away. That means trade.

Evidence from recent Australian artifacts shows that long-distance movement of objects is a telltale sign of trade, not migration. We Africans have been doing this since at least 120,000 years ago. That's the date of beads made from marine shells found a hundred miles inland in Algeria. Trade is 10 times as old as agriculture.

At first it was a peculiarity of us Africans. It gave us the edge over Neanderthals in their own continent and their own climate, because good ideas can spread through trade. New weapons, new foods, new crafts, new ornaments, new tools. Suddenly you are no longer relying on the inventiveness of your own tribe or the capacity of your own territory. You are drawing upon ideas that occurred to anybody anywhere anytime within your trading network.

In the same way, today, American consumers do not have to rely only on their own citizens to discover new consumer goods or new medicines or new music: The Chinese, the Indians, the Brazilians are also able to supply them.

That is what trade does. It creates a collective innovating brain as big as the trade network itself. When you cut people off from exchange networks, their innovation rate collapses. Tasmanians, isolated by rising sea levels about 10,000 years ago, not only failed to share in the advances that came after that time—the boomerang, for example—but actually went backwards in terms of technical virtuosity. The anthropologist Joe Henrich of the University of British Columbia argues that in a small island population, good ideas died faster than they could be replaced. Tierra del Fuego's natives, on a similarly inhospitable and small land, but connected by trading canoes across the much narrower Magellan strait, suffered no such technological regress. They had access to a collective brain the size of South America.

Which is of course why the Internet is such an exciting development. For the first time humanity has not just some big collective brains, but one truly vast one in which almost everybody can share and in which distance is no obstacle.

The political implications are obvious: that human collaboration is necessary for society to work; that the individual is not—and has not been for 120,000 years—able to support his lifestyle; that trade enables us to work for each other not just for ourselves; that there is nothing so antisocial (or impoverishing) as the pursuit of self-sufficiency; and that authoritarian, top-down rule is not the source of order or progress.

Hayek understood all this. And it's time most archaeologists and anthropologists, as well as some politicians and political scientists, did as well.

Mr. Ridley writes the Journal's weekly Mind & Matter column. He is the author of "The Rational Optimist:

How Prosperity Evolves" (Harper, 2010). This op-ed is adapted from his Hayek Prize lecture, given under the auspices of the Manhattan Institute, to be delivered on Sept. 26.